UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/712,428	11/12/2003	Yves R. Joskin	EUR-101	9950

21921   7590   09/11/2007

DOV ROSENFELD
5507 COLLEGE AVE
SUITE 2
OAKLAND, CA 94618

EXAMINER
REKSTAD, ERICK J

ART UNIT	PAPER NUMBER
2621	

MAIL DATE	DELIVERY MODE
09/11/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/712,428	JOSKIN ET AL.
	Examiner	Art Unit	
	Erick Rekstad	2621	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 November 2003*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-37* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5-16,18-26 and 28-34* is/are rejected.

7)☒ Claim(s) *3, 4,10, 16, 17, 23, 27, 33 and 34* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

This is a First Office Action for Application no. 10/712,428 filed on November 12, 2003.

Claim Objections

Claim 3 is objected to because of the following informalities: The claim states "the accepted with the" on the last two lines of the claim. The claim appears to be missing a reference to what is accepted. It is assumed by the Examiner that the claim refers to accepted line-scan data. Appropriate correction is required.

Claims 10, 16, 23, and 33 are objected to because of the following informalities: The claim contains the same error as in claim 3. It is assumed by the Examiner that the claim refers to accepted line-scan data. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 26 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 26 recites the limitation "coefficient generator" in claim 22. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 3, 5-16, 19-24, 29-33, 35, 36 and 37 are rejected under 35

U.S.C. 102(b) as being anticipated by US Patent 5,608,538 to Edgar et al.

[claim 1]

As shown in Figure 4, Edgar teaches the resampling, at a requested resolution,

in order to adjust for geometric distortions and jitter in a scanned image (Col 1 Lines 37-

41, Lines 54-55 and Lines 60-64).

The method for the resampling is shown in Figure 3 and comprises:

Accepting line-scan data sets at a camera rate from a line-scan camera (Step

100), each line-scan data set being of an object imaged for a fixed exposure time and

moving at a relative speed in relation to the line-scan camera (Col 7 Lines 18-21).

Accepting a measure of the relative speed between the line-scan camera and the

object being imaged by the line-scan camera (Steps 111 and 113) (Col 8 Lines 4-13).

Resampling the line-scan data sets to produce resampled line image data sets at

a desired sampling distance (Steps 102, 107 and 115), the resampling being a function

of the camera rate , the measure of relative speed and the desired sampling distance

(Col 7 Lines 60-65, Col 8 Lines 28-35 and Lines 40-43).

[claims 2, 15, 22, and 32]

As shown in Figures 8A and 8B, Edgar teaches the method of claim 1, wherein

there is a resampling time (281) corresponding to each resampled line image data set,

and wherein the resampling produces a resampled line image data set that is a

weighted sum of the accepted line-scan data sets that are partially or completely

accepted during the resampling time corresponding to the resampled line image data

set (Col 14 Lines 26-56), the weightings a function of the relative speed such that a first

proportion of a first accepted line-scan data set is weighted less when the relative speed

is slower than a second proportion of a second accepted line-scan data set

corresponding to when the relative speed is faster (Col 14 Lines 37-44).

[claims 3, 10, 16, 23, and 33]

In view of the objection of the claim, claim 3 is rejected as follows. As shown

above for claim 2, Edgar teaches the use of a weighted resampling. Edgar further

teaches the weighting is a function of the proportion of overlap in the relative motion

direction of the accepted line-scan data with the spatial resampling period of the

particular resampled line image data set (Col 14 Lines 40-44).

[claims 5, 11 and 35]

As shown in Figure 10 A, the position is provided with a time stamp (410) and a

position indicator (407). These pulses are provided to the tracker for an indication of

relative speed (Col 8 Lines 9-18).

[claims 6, 12, 19, 29, and 36]

Edgar teaches the scanning is controlled by the DSP (Col 5 Lines 30-33). Edgar

further teaches the code is stored in RAM so that it may be changed (Col 5 Lines 34-

38).

[claims 7, 13, 20, 30 and 37]

As shown in Figure 5A, Edgar teaches the use of the nearest neighbors to perform the resampling (Col 9 Lines 1-22).

[claim 8]

As shown in Figure 2B, Edgar teaches an apparatus for performing the method of claim 1 (Col 5 Lines 30-38). The Apparatus performs the steps as depicted in Figure 3. As described above for claim 1, Edgar teaches means for accepting line-scan data sets at a camera rate from a line-scan camera (Step 100), each line-scan data set being of an object imaged for a fixed exposure time and moving at a relative speed in relation to the line-scan camera (Col 7 Lines 18-21).

Edgar further teaches means for resampling the line-scan data sets to produce resampled line image data sets at a desired sampling distance (Steps 102, 107 and 115), the resampling being a function of the camera rate , the measure of relative speed and the desired sampling distance (Col 7 Lines 60-65, Col 8 Lines 28-35 and Lines 40-43).

[claim 9]

As shown above for claim 2, Figures 8A and 8B teach a resampling time (281) corresponding to each resampled line image data set, and wherein the resampling produces a resampled line image data set that is a weighted sum of the accepted line-scan data sets that are partially or completely accepted during the resampling time corresponding to the resampled line image data set (Col 14 Lines 26-56), the weightings a function of the relative speed such that a first proportion of a first accepted line-scan data set is weighted less when the relative speed is slower than a second

proportion of a second accepted line-scan data set corresponding to when the relative

speed is faster (Col 14 Lines 37-44).

[claim 14]

As shown above for claims 1 and 8, Edgar teaches the method and apparatus for

performing a data conditioner (100), an encoder (111 and 113), and a resampler (102,

107, 115). As shown in Figure 3, these steps are coupled to one another and are

further run by a scanning unit (30, Fig. 2B).

[claim 21]

As shown in Figure 2B, Edgar teaches an apparatus for performing the method

of claim 1 (Col 5 Lines 30-38). The Apparatus performs the steps as depicted in Figure

3. As described above for claim 1, Edgar teaches a data conditioner for accepting line-

scan data sets at a camera rate from a line-scan camera (Step 100), each line-scan

data set being of an object imaged for a fixed exposure time and moving at a relative

speed in relation to the line-scan camera (Col 7 Lines 18-21).

A rate converter to accepting a measure of the relative speed between the line-

scan camera and the object being imaged by the line-scan camera (Steps 111 and 113)

(Col 8 Lines 4-13). The rate converter further produces a web-rate signal related to the

accepted measure of relative speed by a scaling factor (Col 7 Lines 55-60).

Edgar further teaches a resampler coupled to the data conditioner and to the rate

converter, the resampler to resample the line-scan data sets to produce resampled line

image data sets at a desired sampling distance (Steps 102, 107 and 115), the

resampling being a function of the camera rate, the measure of relative speed and the desired sampling distance (Col 7 Lines 60-65, Col 8 Lines 28-35 and Lines 40-43).

Figure 3 further depicts and image store (109) coupled to the resampler to accept the sets of line image data (Col 8 Lines 43-48).

As shown in Figure 2B, an interface (47) between a computer system and the rate converter, the resampler, and image store to provide for transferring the resampled line image data sets to the computer system, and for setting the scaling factor and desired sampling distance (Col 5 Lines 19-20 and 23-29, Col 6 Lines 57-59, Col 7 Lines 2-3, Col 12 Lines 58-60, Col 14 Line 65-Col 15 Line 4).

[claim 24]

As shown in Figure 2B, the resampler is a DSP (48) which performs the stored instructions in the RAM (49) (Col 5 Lines 27-33, Col 7 Lines 9-11).

[claim 31]

Edgar teaches the software to control the apparatus are stored in RAM (Col 5 Lines 47-52, Col 6 Lines 60-61). This code performs the method of claim 1 (Col 7 Lines 9-18, Figs. 2B and 3). .

Claims 1, 2, 5, 6, 8, 9, 11, 12, 14, 18, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 4,170,419 to Van Tyne et al.

[claim 1]

As shown in Figure 1, Van Tyne teaches a web inspection system. The system includes the use of an inspection head assembly (50) which contains line scan cameras(160) (Col 5 lines 65-68 and Col 10 Lines 23-32).

As shown in Figures 16 and 17, Van Tyne teaches the block diagram of the basic electrical circuitry of the web inspection system. Van Tyne further teaches the circuitry performs the method of:

Accepting line-scan data sets at a camera rate from a line-scan camera, each line-scan set being of an object imaged for a fixed exposure time and moving at a relative speed in relation to the line-scan camera (Col. 15 Line 56-Col 16 Line 28 and Col 16 Lines 46-51) Note: Van Tyne specifically teaches the camera rate (Col 16 Lines 13-16) and fixed exposure time (Col 16 Line 46-51).

Resampling the line-scan data sets to produce resampled line image data sets at a desired sampling distance, the resampling being a function of the camera rate (386), the measure of relative speed (400) and the desired sampling distance (10 scans per linear inch) (Col 16 Lines 21-28, Col 17 Lines 4-9 and Lines 18-50).

Van Tyne further teaches the resampling adjusts for variations in relative speed to produce faithfully exposed data (Col 16 Lines 39-46).

[claim 2]

Van Tyne teaches the desired resampling time of 1.1 milliseconds which would equate to 10 scans per linear inch of a fabric having a velocity of 150 yards per minute (Col 16 Lines 21-24). Van Tyne further teaches the resampling produces a resampled line image data set that is a weighted sum of the accepted line-scan data sets that are partially or completely accepted during the resampling time corresponding to the resampled line image data set (Col 16 Lines 29-42). Note: The method drops scan lines when the speed is slower (Col 16 Lines 32-38).

[claims 5, 11, 18]

Van Tyne further teaches the relative speed is a set of pulses at a rate

proportional to the relative speed (Col 17 Lines 4-9).

[claims 6, 12, 19]

Van Tyne teaches the scan rate is controlled by the control and timing circuitry

(360) (Col 15 Lines 57-62, Col 16 Lines 16-24). Note, the counter (382) and oscillator

(380) control the timing signals and therefore it would be inherent that a change of

either of these values would change the exposure time.

[claim 8]

As shown above for claim 1, Van Tyne teaches the web scanning method is

performed by an apparatus (Fig. 1) which contains the processes as shown in Figure

16.

The processes include a means for accepting line-scan data sets at a camera

rate from a line-scan camera, each line-scan data set being of an object imaged for a

fixed exposure time and moving at a relative speed in relation to the line-scan camera

(360 and 362) (Col 15 Line 65 and Col 16 Lines 13-16).

The processes further include a means for resampling coupled to the means for

accepting, the resampling being of the line-scan data sets to produce resampled line

image data sets at a desired sampling distance, the resampling a function of the

camera, rate, a measure of the relative speed between the line-scan camera and the

object being imaged by the line-scan cameral and the desired sampling distance (364,

366, and 368) (Col 16 Lines 24-28).

[claim 9]

Van Tyne teaches the desired resampling time of 1.1 milliseconds which would

equate to 10 scans per linear inch of a fabric having a velocity of 150 yards per minute

(Col 16 Lines 21-24). Van Tyne further teaches the resampling produces a resampled

line image data set that is a weighted sum of the accepted line-scan data sets that are

partially or completely accepted during the resampling time corresponding to the

resampled line image data set (Col 16 Lines 29-42). Note: The method drops scan

lines when the speed is slower (Col 16 Lines 32-38).

[claim 14]

As shown above for claim 8, Van Tyne teaches an apparatus for performing the

method of claim 1. The apparatus further satisfies the requirements of claim 14 as

shown below.

Figure 19B further details the sensor head circuitry (362 from Fig. 16). Which

contains a data conditioner for accepting line-scan data sets at a camera rate (clk7)

(566) (Col 16 Lines 7-16, Col 21 Lines 27-47).

Figure 17 further details the control and timing circuitry (360 from Fig. 16). The

control and timing circuitry performs the encoder terminal functions required by claim 14

(Col 17 Lines 4-36).

Figure 19B contains a resampler (568 and 570) to resample line image data at a

desired sampling distance (Col 17 Lines 26-30 and Lines 33-35, Col 21 Lines 48-62).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 21, 22, 26, 28 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 4,170,419 to Van Tyne et al.

[claim 21]

As shown above for claim 14, Van Tyne teaches an apparatus comprising a data conditioner and a resampler as described below.

Figure 19B details the sensor head circuitry (362 from Fig. 16). Which contains a data conditioner for accepting line-scan data sets at a camera rate (clk7) (566) (Col 16 Lines 7-16, Col 21 Lines 27-47).

Figure 19B contains a resampler (568 and 570) to resample line image data at a desired sampling distance (Col 17 Lines 26-30 and Lines 33-35, Col 21 Lines 48-62).

Van Tyne also teaches the use of a rate converter (402 and 404 of Fig. 17) to accept a measure of relative speed between the line-scan camera and the object being imaged by the line-scan camera and produce a web-rate signal (velocity correction code) related to the accepted measure of relative speed by a scaling factor (Col 17 Lines 9-17).

The apparatus further comprises an image store (428-430 in Fig. 18) (Col 21 Lines 52-62).

As shown in Figure 16, an interface (368) is provided between a computer system (60) and the rate converter (contained in 360), the resampler (contained in 362) and image store (contained in 364) (Col 15 Lines 43-54 and 56-58, Col 17 Lines 52-53, Col 21 Lines 27-30). Van Tyne further teaches the starting of the inspection system using the computer (Col 7 Lines 39-40, Col 13 Lines 28-30 and 42-48). It would have been obvious to one of ordinary skill in the art at the time of the invention that by a user selecting to turn on the sensor and start auto scanning the scaling factor and desired sampling distance would be set as Van Tyne teaches the use of the values while the system is running.

[claim 22]

Van Tyne teaches the desired resampling time of 1.1 milliseconds which would equate to 10 scans per linear inch of a fabric having a velocity of 150 yards per minute (Col 16 Lines 21-24). Van Tyne further teaches the resampling produces a resampled line image data set that is a weighted sum of the accepted line-scan data sets that are partially or completely accepted during the resampling time corresponding to the resampled line image data set (Col 16 Lines 29-42). Note: The method drops scan lines when the speed is slower (Col 16 Lines 32-38).

[claim 26]

As best understood by the Examiner, in view of the 112 rejection above, the claim is rejected as follows. Van Tyne teaches the resampler (362) accepts a set of camera rate pulses (564a-d in Figure 19B) from the line-scan camera indicating each time a line-scan data set is available form the camera. Van Tyne further teaches the

converting the web-rate signal to a set of sampling pulses, such that a resampled line of

image data is generated each time a sampling pulse is issued (Col 17 Lines 4-14 and

Lines 18-29, Col 21 Lines 54-62). Note, the circuitry in Figure 17 takes the timing

pulses and produces a corrected time pulses (Col 15 Lines 56-58 and Col 16 Lines 52-

55).

[claim 28]

   Van Tyne further teaches the relative speed is a set of pulses at a rate

proportional to the relative speed (Col 17 Lines 4-9).

[claim 29]

   Van Tyne teaches the scan rate is controlled by the control and timing circuitry

(360) (Col 15 Lines 57-62, Col 16 Lines 16-24). Note, the counter (382) and oscillator

(380) control the timing signals and therefore it would be inherent that a change of

either of these values would change the exposure time.

   Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over US

Patent 5,608,538 to Edgar et al.

[claim 25]

   As shown above, Edgar teaches the apparatus of claims 21 and 22. Edgar

further teaches one set of processes performed by the resampler to perform a

lengthwise scaling (Fig. 8B). These steps include the process of multiplying multiple

pixels by a coefficient (309). These pixels are then summed (311). The coefficient is

further generated using a sinc function (Col 14 Lines 40-43). As shown in Figure 3, the

processes performed by the DSP are coupled to one another. It would have been

obvious to one of ordinary skill in the art at the time of the invention to perform the

processes of Edgar as separate hardware units as performing operations in software or

hardware is well known to one of ordinary skill in the art (Official Notice).

Allowable Subject Matter

Claims 4, 17, 27, and 34 are objected to as being dependent upon a rejected

base claim, but would be allowable if rewritten in independent form including all of the

limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

US Patent 4,591,727 to Gaebelein.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Erick Rekstad whose telephone number is 571-272-

7338. The examiner can normally be reached on 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Mehrdad Dastouri can be reached on 571-272-7418. The fax phone

number for the organization where this application or proceeding is assigned is 571-

273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Erick Rekstad
Examiner
AU 2621
(571) 272-7338
erick.rekstad@uspto.gov

GIMS PHILIPPE
PRIMARY EXAMINER